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ABSTRACT

The experience of a number of specific local workplace programs indicates a definite connection between the provision of employee basic skills programs and increased worker productivity. One Tennessee company, for example, reports a 95 percent drop in costs resulting from worker mistakes and a doubling of worker productivity since the company adopted an aggressive education and training program. A study by the American Society for Training and Development found that over half the productivity increases occurring in the United States between 1929 and 1989 were due to learning on the job and that persons given formal workplace training have a 30 percent higher productivity rate. A report of the Bureau of Business Practice indicates that the Manufacturing Literacy Program and Motorola University training courses of Motorola, Inc., have resulted in a productivity rate equal to 500 percent of its original estimates, a 30:1 reduction in manufacturing cycle time, a 4:1 reduction in defects per unit, and a 2.5:1 reduction in inventory. (This brief contains extracts of nine documents detailing the specific effects of basic skills training on worker productivity along with information on the availability and cost of each publication.) (MN)

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Brief

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The Connection Between Employee Basic Skills & Productivity

BCEL is frequently asked for evidence that the provision of employee basic skills programs leads to increased productivity. While there has been no national research attention to this question, the experience of a number of specific local workplace programs indicates a definite connection:

1. According to the **Winter 1992 issue of *Adult Educator*** (published by the Clarksville-Montgomery County (TN) Adult Literacy Council), Richard Plumley, Vice-Chairman of the Board of Plumley Companies, told the Workplace Literacy Conference held in Chattanooga in September 1992 that "the cost of doing things wrong in the Plumley Companies has dropped 95 percent since the company adopted an aggressive education and training program.... and that productivity, defined as sales per employee, has doubled."

2. **BCEL's April 1990 Newsletter (p. 9)** wrote about a successful workplace literacy program in operation for many years at the Federal Reserve Bank of Boston. The article indicates that "the Bank undertook an evaluation of the program from its beginning, reviewing the costs and benefits and comparing employment data on other entry-level employees hired into similar jobs. [According to a senior research associate interviewed by BCEL], 'the findings provide encouraging evidence for companies considering training new under-skilled employees.... The results suggest that several months of formal training combined with on-the-job experience and counseling can enable under-educated adults to catch up'....On average, Center graduates have remained employed at the Bank longer and earned as much as the comparison group. After one year of employment, for example, four-fifths of graduates are sti'l on the job while only three-fifths of the comparison group are. Further, graduates who eventually quit their jobs tend to do so for the same reason as most other employees, to get a better job....One supervisor noted that 'These people have been outstanding. They now have good work habits, nice manners, and are professional. The contrast between Center graduates and people placed on the job right off the street is dramatic.'" For more information about the Federal Reserve program contact Daphne Rudder, Skills Administrator, Federal Reserve Bank of Boston, 600 Atlantic Avenue, Boston, MA 02106, (617) 973-3432.

3. **Bud Holler, Vice President of UAW Local 1097 (NY)**, speaking for AC Rochester and the union: "During the three years we've conducted workplace literacy programs at AC, we've lowered the cost of the product by 47%. In some areas of the plant we've been able to increase quality by over 800%, and they say most of that is directly due to the [basic skills] training. As a result AC Rochester has developed a capacity to attract contracts with foreign companies...." [This quote appeared on p. 7 of BCEL's July 1990 Newsletter feature, "The Large Matter of Small Business," in which this Rochester-area project of the Finger Lakes Regional Education Center for Economic Development was discussed as one of several exemplary workplace literacy models.] For more information about the AC-Rochester program or other workplace literacy programs in the Rochester area, contact David Mathes, Director, Finger Lakes Regional Education Center for Economic Development, 3501 County Road 20, Stanley, NY 14561, (716) 526-6438.

4. In summarizing *America & the New Economy*, authored by Anthony Carnevale, Chief Economist of the American Society for Training and Development,

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BCEL's July 1991 Newsletter paraphrased Carnevale as follows: "One in five college graduates receives training compared with one in thirteen non-college graduates....This maldistribution of training is especially harmful at a time when flexible institutions and technologies require equally flexible and skilled workers at the point of production, and at the interface with the customer, where non-college employees are concentrated. The irony is that *all the research shows that training pays*. More than half the productivity increases in the U.S. between 1929 and 1989 were due to learning on the job—the most important of all factors in boosting production. Furthermore, people trained formally in the workplace have a 30% higher productivity rate." (*America & The New Economy* is $30 ($28 ASTD members) plus $2.25 postage/handling from ASTD Customer Service, 1640 King Street, Box 1443, Alexandria, VA 22313, 703-683-8129.)

5. **BCEL's January 1992 Newsletter (p. 13)** contained an article about a workplace literacy program called SUCCESS, which involves seven ITT Sheraton Hotels in Hawaii and the University of Hawaii. The article indicated that: "According to a recently-published independent evaluation of the program there have been numerous gains as a result of employee participation. For example, job productivity has improved 59 percent, work quality by 61 percent, and most of the participants have been found to be more promotable." (For a copy of the evaluation report write to the Western Curriculum Coordination Center, University of Hawaii at Manoa, College of Education, 1776 University Avenue, Honolulu, HI 96822.)

6. **BCEL's July 1992 Newsletter** carried a feature article (p. 7) which discussed and summarized *The Missing Link: Workplace Education in Small Business*, written by Forrest Chisman of the Southport Institute for Policy Analysis. The article said that: "One of the study's main findings is that employee skills upgrading programs have a handsome pay-off in both improved worker performance and bottom line gains. The firms that invest in education programs are gaining far more benefits from new technology and the reorganization of work than firms that have introduced quality programs but do not provide basic skills education. Where the two operate in tandem, it has resulted in improvements in productivity, customer satisfaction, delivery time, scrap and error rates, and worker morale....[In addition,] employers and workers both report significant improvements in employee motivation, self esteem, willingness to take responsibility, ability to perform well in teams, and communication and problem solving." (A copy of *The Missing Link* is available for $17.95 prepaid from the Southport Institute for Policy Analysis, Suite 460, 820 First Street NE, Washington, DC 20002.)

7. **Back to Basics: Literacy at Work**, a special report of the Bureau of Business Practice, July 21, 1992, contains (on pp. 16-17) the following statements about the Manufacturing Literacy Program and Motorola University training courses of **Motorola Inc.**:

Motorola's efforts to improve the quality of its workforce has yielded some impressive benefits. For example, in the company's cellular telephone factory:

- *Productivity is 500 percent of original estimates, which included all gains expected from factory redesign and automation. Workers perform self-inspections, and defects are 'almost nonexistent.'*

- *Manufacturing cycle time has been reduced by a ratio of 30:1.*

- *There is a 4:1 reduction in defects per unit; a 2.5:1 reduction in inventory.*

Similar stories can be told about the company's semi-con-ductor factory. While an 8 percent workforce downsizing via attrition took place over a nine-month period, the organization achieved record quality improvement and scrap reduction.

'Combining basic reading, math, and English communication with job-specific skill training has resulted in significant measurable improvement at the Motorola Paging Factory....For example, lot sizes were reduced from 30 to 6. Cycle time was reduced by 30 percent, and overall quality improved 34 percent.' (James D. Burge, corporate vice president, Motorola's director of Government Affairs-Personnel.)

(A copy of *Back to Basics* is $10.95 from the Bureau of Business Practice, 24 Rope Ferry Road, Waterford, CT 06386, 203-442-4365.)

8. **Back to Basics: Literacy at Work** (see #7 above) includes on p. 18 this material about **Nestle Stouffer Foods:**

'About nine years ago, we didn't have much formal training or development at all,' says Human Resource Development Director Denny Bichsel. 'It was on the job and only once in a while.' At the time, the company had one manufacturing plant in Solon, Ohio. But when a new plant opened in Gaffney, SC, the company saw that the start-up training efforts in this one plant were worth it.

The company measured the training's effectiveness. The start-up curves for the Gaffney plant were compared with the Solon plant and the differences were dramatic. 'We had less scrap and more packages out faster. Quality went up as well as quantity,' says Bichsel. 'We found out that the dollars we put into training were significantly offset by profitability. We are now committed to continuous training as a result.'

(A copy of *Back to Basics* is $10.95 from the Bureau of Business Practice, 24 Rope Ferry Road, Waterford, CT 06386, 203-442-4365.)

9. **G. Rives Neblett, owner and board chairman of Shelby (MS) Die Casting Company**, reporting on the transformation of his company after the introduction of a workplace literacy program in 1991 and the organizational changes that would not have been possible without it: "By the fall of 1992, nothing short of a miracle had conformed a plant that was on the verge of closing into a competitive industry seeking new challenges and opportunities." According to Neblett, Shelby's scrap rate was reduced from 35 percent to 8 percent, daily production levels almost doubled, and the company's profits improved by more than 100 percent. Further, says company personnel director Jackie Sanders, worker morale—which previously would have been rated at 2.5 on a scale of 1 to 10—now ranks a 9; and absenteeism, which was common among employees before 1991, is now zero. In October 1992, the Shelby plant was awarded a contract with a new customer that will increase its sales by 20 percent, and an established customer that had put new business on hold has indicated a commitment to additional contracts. Another customer, after touring the plant, summed up the change at Shelby this way: "I cannot believe this is the same place, I have never seen a plant turn around this fast." [Notes: Comments are based on a memorandum by and BCEL interviews with Mr. Neblett, and an article from the October 11, 1992 issue of *The Clarion-Ledger* of Jackson, Mississippi. For further information about the Shelby program contact G. Rives Neblett, Chairman of the Board, Shelby Die Casting Company, Box 63, Shelby, MS 38774, 601-398-5121.]

This *Brief* is available from BCEL for $2.00 a copy prepaid.